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RHODE ISLAND ARBOR DAY

MAY 10 1918

TREES AND THRIFT

Rhode Island Education Circulars

TWENTY-SEVENTH ANNUAL PROGRAM

FOR THE

OBSERVANCE OF ARBOR DAY IN THE SCHOOLS OF RHODE ISLAND

MAY 10, 1918

Blossoms of Sugar Maple

ISSUED BY

THE COMMISSIONER OF PUBLIC SCHOOLS

STATE OF RHODE ISLAND

Chestnut Tree on Wright Estate in Foster

(*See page 9*)

State of Rhode Island

Department of Education

COMMISSIONER'S ARBOR DAY MESSAGE

To the Boys and Girls of Rhode Island Schools:

THERE has never been a time in our country when there was greater need of taking thought of the things Arbor Day voices, and of learning the lessons the trees teach. Your love of trees, your study of their beauty and utility, your annual observance of springtime, with its promise of harvest, have given you some knowledge of the truth and beauty that fill the earth, and have shown you how the lives of all creatures are sustained by the earth's bounty. For fifty years our people have been warned of serious losses in our forests, and long ago Arbor Day was appointed to make us mindful of the need of planting and protecting trees. Now the world's food supply, like the trees, is beginning to fail to meet the needs of the earth's myriad peoples. With the call of spring to plant and preserve trees, comes the urgent plea to plant and sow, that the earth may yield her increase in larger measure.

Hundreds of Rhode Island oaks, preserved through many years, are now being taken for building our country's much-needed ships, and some of you have doubtless seen the trunks of these noble trees carried to shipyards. With our regret for the loss of these giants of the forest, we may be glad that they have been conserved for a patriotic use, and earnestly hope that other trees may be planted to take their places. This is a true lesson in conservation.

For the reasons given, the special feature selected for this year's program is trees and food thrift. Its object is to stimulate in our schools a more thoughtful study of the values and uses of foods, and to prompt more earnest coöperation in the production and conservation of food. Food has become a great national problem, and there is no subject of study more worthy of a place in our schools of American citizenship.

The things I said, in my message to you a year ago, about the urgent need of increasing our country's food supply may be repeated with the force of greater necessity. "Every springtime calls for planting and sowing, but never before was the call so strong or the need so great as now. The time has come when our country needs your help, boys and girls of our schools, to insure our people against want. Do your part by planting home and school gardens, helping farmers in vacation time, gathering the harvests of autumn, and in other ways."

A year ago I said that boys and girls may do their part in conserving their country's resources. Now we see that the boys and girls must do their part to insure a full supply of food for our country and friendly nations. We cannot feed the world and win the war without the help of our school boys and girls. In this war, as never before, he who serves on farm or in shop, like the soldier who fights on the battlefield, is helping to protect his country; and the slacker at home is as worthless as the coward in battle. Now, as never before, those who cannot fight, even the young, may do the things that count for victory and be accounted among their country's patriots.

WALTER E. RANGER,
Commissioner of Public Schools.

SUGGESTIVE PROGRAM

Theme for Arbor Day, 1918—Trees and Food Thrift.

CHORUS. SCRIPTURE. COMMISSIONER'S MESSAGE. RECITATION. SONG. GROUP EXERCISE. ESSAY—"Food Conservation." SONG. BRIEF REPORTS ON SCHOOL GARDENS. RECITATIONS. SONG. GROUP EXERCISE—"Patriotism and Gardens." CHORUS PLANTING EXERCISES.

Go *back* to the *simple* life, be contented with *simple* food, *simple* pleasures, *simple* clothes. Work hard, pray hard, play hard. Work, eat, recreate and sleep. Do it all courageously. *We have a victory to win.—Hoover.*

NO-WASTE PLEDGE

I promise in my country's need
  To be a soldier true;
I cannot go away to fight,
  But what I can, I'll do.

I will be careful of the things
  I use at school or play,
And leave no food upon my plate
  That must be thrown away.

I'll save from what I have to spend
  For "movies" and things sweet,
To give to other children, who
  Have not enough to eat.

All this I will do cheerfully
  And not complain of it,
Because I'm an American,
  And want to "do my bit."

—*Emily Seymour Coit.*

ARBOR DAY SELECTIONS FOR CHILDREN

FOREIGN LANDS

Up into the cherry tree
Who should climb but little me?
I held the trunk with both my hands
And looked abroad on foreign lands.

I saw the next-door garden lie,
Adorned with flowers, before my eye,
And pleasant faces more
That I had never seen before.

To where the roads on either hand
Lead onward into fairy land,
Where all the children dine at five,
And all the playthings come alive.

I saw the dimpling river pass
And be the sky's blue looking-glass;
The dusty roads go up and down
With people tramping in to town

If I could find a higher tree
Farther and farther I should see,
To where the grown-up river slips
Into the sea among the ships.

—*Robert Louis Stevenson.*

ARBOR DAY TREE

Dear little tree that we plant to-day,
What will you be when we're old and gray?
"The savings bank of the squirrel and mouse,
For robin and wren an apartment house,
The dressing-room of the butterfly's ball,
The locust's and katydid's concert hall,
The schoolboy's ladder in pleasant June,
The schoolgirl's tent in the July noon,
And my leaves shall whisper them merrily
A tale of the children who planted me."

WIND AND WAVE

O, when I hear at sea
  The water on our ee,
I fancy that I hear the wind
  That combs my hemlock tree.

But when beneath that tree
  I listen eagerly,
I seem to hear the rushing wave
  I heard far out at sea.

—*Charles Warren Stoddard.*

ARBOR DAY SCRIPTURE LESSON

Therefore thou shalt keep the commandments of the Lord thy God, to walk in his ways, and to fear him.

For the Lord thy God bringeth thee into a good land, a land of brooks of water, of fountains and depths that spring out of valleys and hills;

A land of wheat, and barley and vines, and fig trees, and pomegranates; a land of oil, olive, and honey;

A land wherein thou shalt eat bread without scarceness; thou shalt not lack for any thing in it; a land whose stones are iron, and out of whose hills thou mayest dig brass.

When thou hast eaten and art full, then thou shalt bless the Lord thy God for the good land which he hath given thee.

Beware that thou forget not the Lord thy God, in not keeping his commandments, and his judgments, and his statutes, which I command thee this day:

Lest when thou hast eaten and art full, and hast built goodly houses, and dwelt therein;

And when thy herds and thy flocks multiply, and thy silver and thy gold is multiplied, and all that thou hast is multiplied;

Then thine heart be lifted up and thou forget the Lord thy God.

But thou shalt remember the Lord, thy God; for it is he that giveth thee power to get wealth.—*Deuteronomy, viii*, 6–14, 18.

THE GLOCESTER WHITE PINE

The largest white pine tree in the state, a tall and magnificent specimen, one of the finest types of Rhode Island forest trees, was blown down during an unusually heavy windstorm toward the last of February, 1918, breaking off about thirty feet from the ground.

The tree stood about a mile east of Chepachet and a mile north of Spring Grove. Truly a monarch of the forest, it had attracted unusual attention, both because of its size and symmetry. The pine was threatened by the lumbermen in the preceding fall, and the Rhode Island Institute of Instruction appropriated $50 for its preservation, to be expended, if need be, in the purchase of the tree and in making an agreement that it should not be cut down. However, the plea of "Woodman spare that tree" and the patriotic pride of the owner, Mr. Andrew J. Steere, had guaranteed its safety from the woodsman's axe. The Providence Sunday Journal published an article concerning the tree on February 10th, 1918. The American Forestry for April, 1918, published an illustrated article about the tree.

GLADLY LEND A HAND

Miss Caroline Hazard — Tune: "Auld Lang Syne"

1. Full ma - ny a thou - sand liv - ing leaves It takes to deck one tree,
2. Full ma - ny a flower must blos - som fair, To deck the robe of Spring;
3. And nei - ther leaf nor fair - est flower But does its part with joy.

And each leaf flut - ters in the breeze To make it fair to see.
Full ma - ny a bird must do its share To make the cho - rus ring.
Then let us each from this glad hour, Our no - blest powers em - ploy.

Then look not down, but ev - er up, Look out o'er all the land,
Then look not down, but ev - er up, Look out o'er all the land,
And look not down, but ev - er up, Look out o'er all the land,

Look for - ward, for - ward, nev - er back, And glad - ly lend a hand.

From "Songs of Happy Life," by permission of the publishers, Silver, Burdett and Company.

A Group of Rhode Island Oak Trees

RHODE ISLAND OAKS

By Charles Carroll, Ph.D.

[*Large oak trees in various sections of Rhode Island are being felled to make timber for building cargo ships*]

Rhode Island's soldier sons have sailed across the stormy sea;
They're fighting with our brave Allies to safeguard Liberty.
They're staunch and they are steadfast, and they'll fight until the Hun
Has been driven back to Berlin with the bayonet and gun.

Other sons of old Rhode Island, cradle of Democracy,
Are training and preparing for the armies of the free;
They're going soon to join the hosts at Armageddon field,
And Kaiser Bill, if he is wise, before they go, will yield.

Rhode Island's sons and daughters true, who may not carry arms,
Are toiling day and night in shops or working on their farms;
They're making guns and powder, shot and shell in great amount;
They're raising crops, and trying hard to do the things that count.

There's freedom in Rhode Island air, there's something in the earth
That stimulates the native born and those of foreign birth;
Even the trees in such a time have listened to the call,
And many sturdy oaks before the woodman's axe must fall.

They're needed for the bridge of ships America will build
And stretch across the ocean, with wheat and meat well filled,
To feed the hungry nations that the Huns have robbed of all
Except a steadfast courage and a faith that cannot fall.

It seems almost a pity that a fine tree like an oak,
In years exceeding memories of even oldest folk,
Must be fashioned into keelson, ribs, and planks in utmost haste—
A century will be required to remedy the waste.

We've talked of conservation and of saving forest trees;
Now we're felling them to build great ships to sail upon the seas;
'Twas conservation saved them, and conservation calls
For planting new trees to replace each oak tree as it falls.

TREE QUESTIONS

The Arbor Day Program for 1917, at page 8, presented a list of tree questions for boys and girls to answer. The promise was made that in 1918 the Arbor Day Program would contain the names of those first sending correct answers to the Commissioner of Public Schools. The best sets of answers were made by Carmelia Ferrante and Annie Aspinwall, each aged 12 years and both pupils at the Pocasset School in Johnston. The questions and answers follow:

1. How many kinds of buds can you find on an elm tree. Ans.—Two.

2. Place some branches in water to unfold. Why are there different kinds of buds on the elm? Ans.—One has to be flower buds, and one has to be leaves.

3. Name three trees that have blossoms before leaves. Ans.—Elm, maple and pussywillow trees have blossoms before leaves.

4. Can you find any tree that has blossoms and leaves at the same time. Ans.—Cherry, apple and pear trees have blossoms and leaves at the same time.

5. Watch for trees that blossom after the leaves have come out. What ones do this? Ans.—Chestnut, horse-chestnut and witch-hazel.

6. What is the earliest maple to blossom? Ans.—The red maple.

7. Inspect the maple tree to see what comes from the flower. Ans.—Keys come from the blossoms of the maple tree.

8. Find little maple trees that have just sprouted. Compare the fruit of the maple with the seedling. Ans.—The seedlings have two leaves on each side, like the wings of a key.

9. I am thinking of a bush of the damp woods that has yellow blossoms in early spring. The broken twigs have a pleasant odor. What is it? Ans.—Spice bush.

10. Look for some exposed roots and measure to see how far the roots reach. Ans.—The longest root I have seen was six feet.

11. At what date did the flowering dogwood blossom in the spring of 1917? Ans.—The dogwood blossomed May 22, 1917, in Waterman's woods, Johnston.

12. At what date did the horse-chestnut have full leaf? Ans.—The first of June.

13. What color are the buds of the Norway maple just before the leaves come out? Ans.—Yellow. [They are also red toward the base, and when the bud begins to open the inner scales are shown to be covered with dark rusty-brown hairs.—Ed.]

14. What kind of blossoms grow on a horse-chestnut tree? Ans.—White.

15. How many of the blossoms form horse-chestnuts? Ans.—Two or three blossoms on each bunch.

16. How many kinds of pussies are there on the willow? Ans.—Two.

17. What becomes of each kind of pussy? Ans.—Green pussies go to seed; yellow pussies wither and fall off after the yellow powder has blown away.

18. What is the state tree? Ans.—The maple.

19. What kind of oak is most common along our boulevards and parks? Ans.—Red oak. [The pin oak is most common in and near Providence.—Ed.]

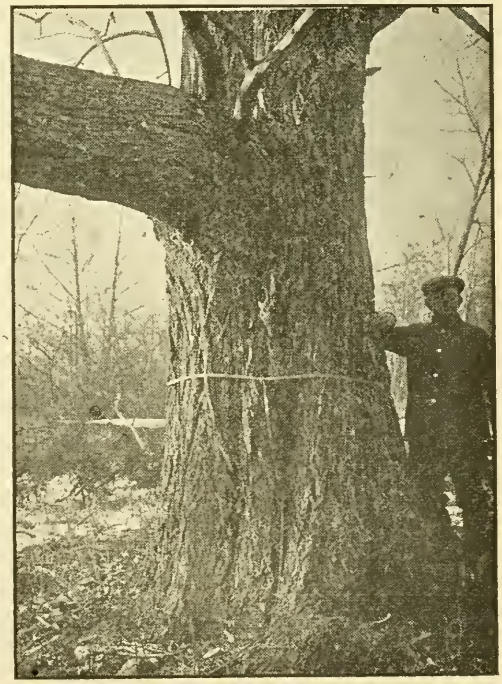
20. What is the name of the trees in front of the Providence Public Library? They grow also near the entrance to Swan Point Cemetery. Ans.—Norway maple. [The trees in front of the Providence Public Library are specimens of the gingko. The gingko is a native of northern China.—Ed.]

NEW TREE QUESTIONS

The Arbor Day Program for 1917 also requested boys and girls who had observed something about trees which they did not know before to send questions to the Commissioner of Public Schools for a new list in 1918. The following questions were received from children in the Pocasset School in Johnston:

1. What tree has bark that curls?
2. Where do trees get their sap?
3. What tree has white bark?
4. What tree has bark that is good to chew?
5. Which tree grows fastest?
6. Which tree has horizontal branches?
7. Which tree has branches slanting downward?
8. Which tree has the most erect branches?
9. Which trees have pointed tops?
10. Can you tell how old a tree is when it is cut down? How?
11. What kind of blossoms does an oak tree have?
12. How many kinds of pine trees can you distinguish? How?

A LARGE CHESTNUT TREE



The picture at the right and our frontispiece show two views of a magnificent chestnut tree, which stands in Foster on the country estate of Nathan M. Wright, Esq., Clerk of the Sixth Judicial District Court. Towering to a height unusual for a chestnut tree, and far above the tops of its neighbors, this tree has two large and wide-spreading limbs, one of which is seen plainly in the frontispiece, and in the picture at the right stretches out on the side opposite the man. The tree stands on sloping ground, and the figure of the man, while affording an opportunity for comparison, deceives as to the height of the tape measure. The man stands on high ground; the tape measure really is five feet from the ground, and shows a girth at that point of 12 feet and 4 inches.

The tree is near Briggs road and the Jenks schoolhouse, and may be reached from Providence by the Danielson car line.

STORY OF A THOUSAND YEAR PINE

Anastasia Roach, Rhode Island Normal School, 1918

(A Summary of the Tree's Life History as told by E. A. Mills)

Observation.	*Inference*
115 feet tall, covered with rough golden brown bark. 1047 rings of growth.	1047 years old.
Cut down in 1903.	Born about 856.
Some rings were thicker than others.	Some seasons were more favorable than others.
Kinked condition of several rings of growth beginning with 20th.	Probably caused by heavy snow as there are no scars.
Century of rapid growth.	Good seasons as well as good soil.
Tree grew evenly and with pith in centre.	No crowding of neighbors to share sun and soil.
Accident when completing 135th ring of growth. Bark broken and torn. These wounds covered by 12 years of growth.	Large tree growing near by must have blown over. In falling stabbed it with two dead limbs.
Year or two later winding ways began to be excavated.	Ants and borers.
Large colonies established that threatened death.	Something must have happened to nut-hatches and chickadees.
Relief came.	Probably the Texas woodpecker.
Wounds finally healed.	Woodpecker cut deeply in tree to get borers, but also returned to devour ants.
Even tenor for 3 centuries.	
A limb torn from top and shoulder badly shattered in 1301.	Lightning.
Lost several arms.	Violent wind.
1348, lost two of the largest arms.	Broken by weights of accumulations of snow.

LOWER SECTION OF OLD PINE TRUNK

Found two flint Indian arrow heads.	Maybe shot by Indians.
Outer ring pierced was 630th, making it the year 1486.	Maybe shot by Cliff-Dweller scout.
Year Columbus discovered America Old Pine was 100 feet above earth, and 636 years old.	
1540, first felt steel and fire; shown by scars on instep.	Spanish exploration party probably built fire against instep. Explorers hacked it with an axe.
From 1540 to 1762 little of special interest was found.	
1762, season not regular. One year's growth resembled two.	Checked by cold wave.
1804, layer of wood the thinnest and 1805 hardly any grew.	Drought.
Between 1811 and 1812 wood checked and scattered. Bad horizontal break some distance from ground.	Violent earthquake.
Two roots broken in two; five pound rock imbedded in tree.	Rock bombardment caused by earthquake.
1859, axe mark made.	Intended for blaze trai .
Scarred ankle.	Prospectors made fire.
1881, several modern rifle bullets found beneath blaze of same year.	Tree a target during a shooting contest.

Forestry looks more to what we shall leave to posterity than to what we can use up and enjoy ourselves. The man who really laid the foundation of England's dominion on land and sea was old John Evelyn, who planted the oaks out of which England's ships were made a century later.—*Jesse B. Mowry.*

OUR LIBERTY TREE

Mary A. O'Connell, Rhode Island Normal School, 1919

As Americans we welcome the Fourth of July with a thrill of patriotism, because it is the birthday of national independence. We think of it as the most truly American festival of the year.

How did the Declaration of Independence come about? Was it the work of a single day, week or month? If we consult history we shall find that for many years before July 4, 1776, the idea of Liberty had been cherished by the people. We shall find that Roger Williams in 1636 preached soul liberty as a natural attribute of personal liberty, and that he founded the first settlement in Rhode Island in the name of Liberty. We shall find that the theory and practice of Liberty and of independence never were permitted to depart from Rhode Island, but that always and even from 1636 to 1776 Rhode Island was the home of a free and independent people, who resisted every effort of the mother country to restrain them. Every act of England which aimed to establish the King's authority was regarded as fresh cause for indignation and protest. Hence secret meetings were frequently held and sometimes overt acts of resistance were committed. Rhode Island led all the other American colonies in maintaining independence, and was the first to declare independence and establish a sovereign state.

One particular witness of, and even participant in the stirring assemblies of the Revolutionary period was the Liberty Tree. The Liberty Tree was usually a large elm or oak in a conspicuous part of the town; and under it the people gathered to discuss the cause of Liberty. The tree itself must sometimes have caught the inspiration of the meeting, and echoed the sentiments of the people with the rustling of its leaves and the swaying of its branches.

Rhode Island was among the leaders in the movement for American independence. Let us go back many years to the dedication of our own Liberty Tree in Providence. July 25, 1768, was a beautiful summer day. All the morning preparations were being made around Captain Joseph Olney's house, for this was to be a day dedicated to a great idea.

In front of the public house, a little north of the street, stood a massive elm tree. It seemed to beckon to the people and call them to its welcoming shade. A high staircase led to a small platform or summer-house in the branches. Soon a great crowd gathered, the more prominent citizens taking places in the summer-house. About two o'clock the exercises began. In that vast crowd were men, women, children, people of all ages, all alike in one respect—their ardent desire for true liberty.

The chattering of voices ceased, as speaker after speaker addressed the throng. As Silas Downer, a rising young lawyer, spoke there was a tense silence, followed by an animated tribute of applause. Then came the most solemn part of the ceremony. Those near the tree laid their hands upon it, while Mr. Downer repeated these words:

"We do, in the name and behalf of all true Sons of Liberty, in America, Great Britain, Ireland, Corsica, or wheresoever they may be dispersed throughout the world, dedicate this tree to be a Tree of Liberty. May all our counsels and deliberations under its venerable branches be guided by wisdom and directed to the support and maintenance of that Liberty which our renowned forefathers sought out and found under trees and in the wilderness. May it long flourish and may the Sons of Liberty often repair hither to confirm and strengthen each other; when they look toward this sacred elm, may they be penetrated with a sense of their duty toward themselves and their posterity, and may they, like the house of David, grow stronger and stronger, while their enemies, like the house of Saul, grow weaker and weaker."

An almost reverential pause followed, so deeply were all impressed. The crowd dispersed with a firm conviction that they would meet again under their new patron of Liberty.

What stories might this tree tell, if, like the fabled oak, it had the wondrous gift of talking leaves. What momentous transactions were discussed, what stirring speeches were made, what secret plans were laid beneath its fostering protection. We know the result of all those endeavors,—our own liberty.

Just north of Olney street, close to Clorane street, in Providence, stands a large old elm, which is, according to tradition, a descendant of the original Liberty Tree. It is almost a century old, and it is said to be almost an exact likeness of its famous ancestor.

Just as Liberty was the aim of the American Revolution, so today we are fighting for Liberty. In the Revolution, we fought against England; now in the great world conflict, we have joined hands with our former enemy, and are fighting with her as an ally in a common cause.

Although it is true that we do not meet beneath Liberty Trees to discuss our plans, the idea has not passed from memory. On Arbor Day, 1917, the Senior class of the Rhode Island Normal School planted an English White Oak, a species often used for Liberty Trees. How significant this is of our alliance with England. Who can say that sometime in the future our posterity will not look upon the English White Oak as a reminder of our alliance with England to establish the Liberty of the world?

AN APRIL BATTLE-GROUND

I looked out of my window one cold spring day
At a brave crocus army in battle array;
Their uniforms all were of yellow sateen
And their bayonet-tips of striped white and green.

The foe came by millions down from the skies,
Airy and noiseless as white butterflies;
And, angry and fierce, and cutting and cold,
These soldiers in white fought the soldiers in gold.

All day did the war wage; then ended the fight;
The buff-coated soldiers were lost to our sight.
Then came a few days of turquoise and gold;
The sun in his arms did the cold earth enfold.

The soldiers in white grew faint till they died,
But the brave boys in gold stood up side by side.
And this did I see as I looked at the border:—
They still were alive and in good marching order!—*Adelaide Prouty.*

THE SUGAR MAPLE TREE

The sugar maple tree is an excellent tree for nature-study this spring. Why not prepare to make some maple sugar next spring? It would be both patriotic and instructive. The Allies will need sugar. To help them we must cut down our own consumption and use substitutes.

The leaves of a tree are starch factories, run by sunlight power. The machinery is the leaf green, called chlorophyll. Last summer the leaves manufactured starch and stored it in the sapwood and the small branches. In early spring the starch changes to sugar, and the sweetened sap moving up and down the trunk, dissolves the sugar and carries it in solution. Holes may be bored into the sugar maples with augers. Hollow sap-spiles are then driven in and the sap flows through them into pails. The sap is then boiled down to syrup or sugar.

THE TREES AND ROCKS OF QUINSNICKET

William Gould Vinal, Rhode Island Normal School

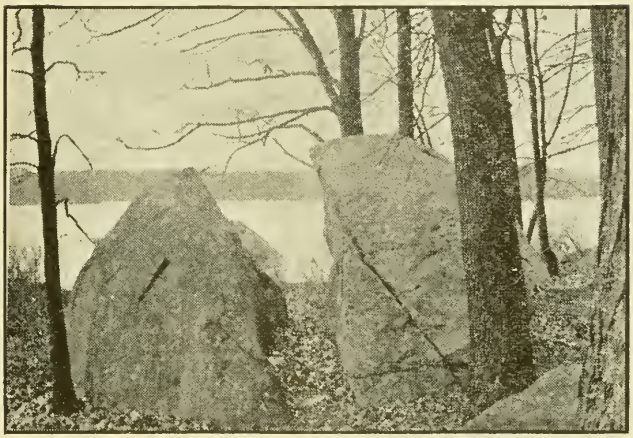


Fig. 1

A long time ago this part of the country was very mountainous. Frost and snow broke up the coarse rock materials, and spring torrents washed the soil down the steep slopes. The high elevations were gradually worn down, age after age, until nothing remained but rock cores and low hills. Then came the great glacier from the north. It rounded off the hills, planed the rocks, and pushed up hills of gravel. Huge boulders were torn from rock cliffs and carried to new regions. It is difficult to realize that the glacier came some ten thousand years ago, as it is a little over 425 years since Columbus discovered America, and 2000 years have not passed since the birth of Christ. Yet the results of the invasion of this ancient ice sheet are but as yesterday.

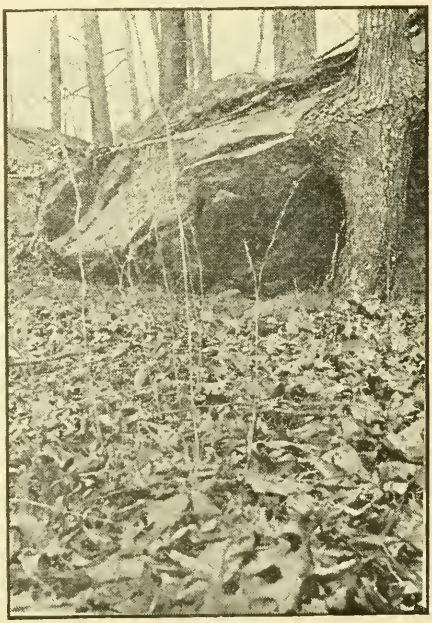


Fig. 2

One picture shows an ancient "bed-rock" that has always resided at Quinsnicket, and "drift-rocks" that were brought by the glacier. What is the character of the surface of the older inhabitant? What caused this? What is the weight of glacial boulder? (Give a rough estimate.) The glacier is the only known force in nature that can transport objects of this weight. What other pictures show permanent rock residents? Transported rocks?

The ledges often have a gentle, smooth slope on the north, and are steep and

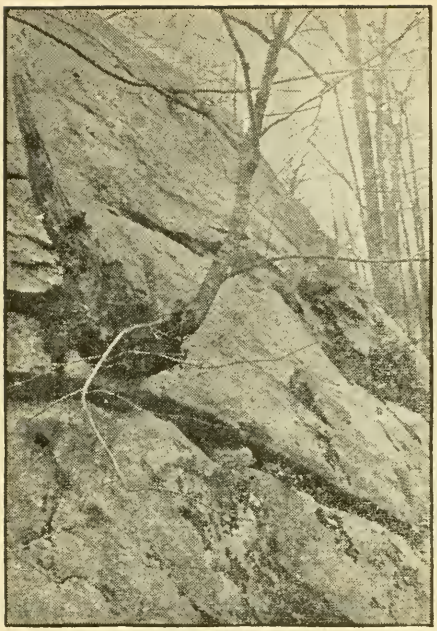


Fig. 3

ragged on the south. How do you account for this fact? Point out these two kinds of slopes in the pictures.

The frost and heat are slowly breaking up the Quinsnicket rocks. Some have been split apart and others have merely cracked. As a result the crevices are becoming filled with rock waste, and a mantle of soil is beginning to cover the bare rocks. Various plants have come to the aid of the weathering agents, and the rocks have been further broken by the roots of trees.

What picture shows rock crevices? What caused the crevices? What was needed in the crevices for the plants to grow? The plants growing in the seams of one of these rocks is the false lily-of-the-valley (Fig. 4). How do they aid in rock decay?

What picture shows that a tree is mightier than a rock? What picture shows a rock split by heat and cold? Wedges of ice pry rocks apart with the same force that is exerted when ice breaks water pipes in winter. Trees growing against the edge of a rock become calloused. What picture illustrates this fact?

If it were not for Quinsnicket being so rocky it might not now be a park. A region of this kind is not suited to farming. Consequently it was not cleared of its forests. When Providence and its suburbs began to get crowded a park commission was formed to pick out breathing spaces. The Lincoln Woods Reservation, thanks to its rocks, was one place that had not been robbed of its natural beauty. Glacier, rocks, trees, reservation, therefore, are the titles to the four chapters in the story of Lincoln Woods.

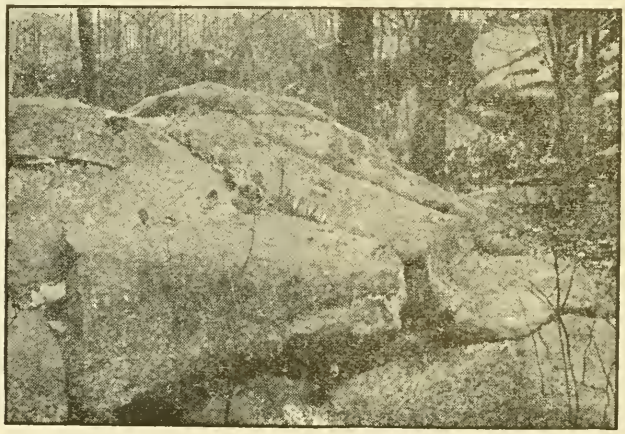


Fig. 4

Fig. 5

You may already have guessed that this writing is designed to be suggestive as to an interesting study that may be made when one goes to Quinsnicket. The following is a list of

THINGS TO DO AT QUINSNICKET

1. Point out bed rocks and glacial boulders.

2. Find a rock, or portion of a rock, recently exposed to the weather. How did you recognize it? What caused the new exposure?

3. What changes have taken place in long-weathered rocks?

4. Point out ridges, pits, and furrows caused by weathering. (Fig. 5.)

5. Find a rock that you think was split by heat and cold.

6. Find a rock from which the surface shell has broken loose. This was probably due to unequal heating and cooling, as a glass cracks when plunged into hot water.

7. The Quinsnicket rocks are mostly covered with rootless plants called lichens, which slowly aid in destroying the rocks. Collect six kinds of lichens. (Figs. 4, 5, 6.)

8. Find a rock with the false lily-of-the-valley growing in its crevices. What made this possible?

9. Find a ledge with the rock fern (Polypodium) growing upon it. (Fig. 5.) How much soil has collected beneath the ferns? How did it get there?

10. Locate a tree that is slowly wedging a rock apart.

11. There is one tree in the park that is lifting a large boulder. Be on the watch for it.

12. Trees that grow against the edge of a rock become calloused. Find one.

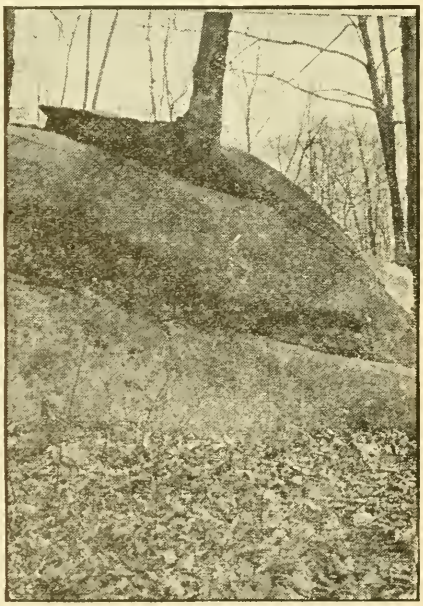


Fig. 6

Fig. 7

13. Observe little trees growing from a high niche in a rock. How did they get there? (Fig. 3.)
14. What is the character of tree roots which grow along the surface of the rocks?
15. What is the ultimate goal of tree roots which grow along ledges?
16. Where have bends in the roads been determined by rocks? By trees?
17. Find rocks that are being sculptured by brooks.
18. Find localities where brooks have worn the soil away from the roots of trees.

WHAT TREE ARE YOU GOING TO PLANT THIS YEAR?

If you plant a tree this Arbor Day will you do it as a merely ceremonial form, or will the tree mean something to you? Our forefathers planted Liberty trees to signify the freedom which they sought from tyranny.

The senior class of Rhode Island Normal School last spring planted an English white oak. It was significant of the democratic citizenship of the world that an American school should select as its Liberty tree an English oak; it indicated an appreciation of the ties of brotherhood linking the great free peoples of the earth.

The seniors of 1915 planted a Chinese chestnut tree. The American chestnut tree is being ravaged by the chestnut bark disease. It is threatened with extinction. The Chinese chestnut is thought to be immune to this disease.

The class of 1916 planted the Kentucky coffee tree, so named because its bean was substituted for the ordinary beverages of the colonial day.

Let us know what you plant and why.

THE OAK TREE

If an oak tree never did anything more than stand year after year, firm-rooted and majestic, it would always be a source of pleasure to the eye of man. Yet it means far more to man than that; it plays a useful part in his every-day life. For this same oak, as part of a ship, or machine, or automobile, or house, or even a desk, is of definite use in helping to serve man.

But, as you can readily see, between the oak tree in the forest and the oak lumber which figures in your life dozens of times each day, there is a vast gap. And this gap can only be bridged by the efforts of man—his foresight, his physical strength, his inventive ingenuity, his business instinct, his nation's laws—in fact, every aid of civilization. It needs all these to make the oak tree do all it can for mankind.

THE PRODUCTION AND CONSERVATION OF FOOD

Prepared in collaboration with the Rhode Island Food Administration, represented by Mrs. Carl Barus

A PLEA FOR HOME GARDENS

THE WHITE HOUSE

WASHINGTON

25 February, 1918.

My dear Mr. Secretary:

I sincerely hope that you may be successful through the Bureau of Education in arousing the interest of teachers and children in the schools of the United States in the cultivation of home gardens. Every boy and girl who really sees what the home garden may mean will, I am sure, enter into the purpose with high spirits, because I am sure they would all like to feel that they are in fact fighting in France by joining the home garden army. They know that America has undertaken to send meat and flour and wheat and other foods for the support of the soldiers who are doing the fighting, for the men and women who are making the munitions, and for the boys and girls of Western Europe, and that we must also feed ourselves while we are carrying on this war. The movement to establish gardens, therefore, and to have the children work in them is just as real and patriotic an effort as the building of ships or the firing of cannon. I hope that this spring every school will have a regiment in the Volunteer War Garden Army.

Cordially and sincerely yours,

WOODROW WILSON.

Hon. FRANKLIN K. LANE,
Secretary of the Interior.

BACK YARD MUNITION PLANTS

Government figures indicate that not less than six hundred thousand men trained and experienced in farm work have been taken from the farms of America since the beginning of this country's participation in the war. No one can fail to realize what all this will inevitably mean in the matter of farm production.

With this definite handicap in sight for the farm crops, the back-yard and vacant-lot garden becomes more than ever a war garden and a national necessity. The single factor most vital to military success as food. Food is the one thing for which there is no substitute. No scientist has yet discovered a substitute for food. The only solution of of the food problem is an increased production, and to make this possible the home gardeners of America face 1918 with a responsibility far greater than that with which they set about their work last season.

One of the means which will prove most helpful to the home gardener in adding to the food supply is the national daylight-saving scheme, which a number of nations have put into operation with great profit as a war measure. This simple plan of turning the clock forward and starting the day's work an hour earlier during the summer months will give an extra hour of daylight in the afternoon, which will furnish the opportunity of devoting that much more time to the cultivation of the soil. The results which can be accomplished by the addition of an hour every day for garden work will largely increase the product raised.

By their energy, industry, and application in 1917 the home gardeners of the United States showed that they were alive to the call of patriotism. The garden slacker received no more cordial consideration than did the military slacker. Home gardening has come to be regarded as the gift of a patriotic people to a nation in need. It is also an enterprise of individual benefit. Through garden activities Americans in hundreds of thousands of households have learned new lessons in the joy of living. Last year's excursion into home gardening was to many a voyage of discovery as to the delights of the table when supplied

with vegetables freshly gathered from the home garden. It was also a journey of exploration through a land of new healthfulness and strength revealed through the medium of ourdoor exercise and wholesome vegetable diet.

The coming season should see the recultivation of every garden cultivated in 1917, and the addition of all the other garden-planting area available. During three and a half years of warfare the Allied nations have drained their agricultural resources to a point where productive possibilities are now at a minimum. The European food supply must necessarily come from America, as the land from which shipments can be made with the least tax on ships. The time requirements for shipments from Australia and other remote countries are such as to be prohibitive. America is the one place upon which the Allies may depend for the feeding of their armies and populations. To enable America to do its share our home gardeners must recognize that they are war gardeners, and therefore vital to the success of the armies. They must produce foodstuffs on a tremendous scale, with the central thought that unending industry on the part of their gardens is the price of world-wide freedom.

This means that it will be none too much if two or more war gardens are made to grow where one grew before, creating a vast aggregate yield at the points of consumption. By the same logic, there must be universal application of the simple principles of home canning and drying of vegetables and fruits. Last year the households of America created a winter supply of canned goods amounting to more than half a billion jars. This year they should make it more than a billion. By making themselves both soldiers of the soil and cohorts of conservation they will form a vast army of aggression—fearless, defiant, and invincible. With forces thus organized to support the military establishment America can conquer the alien foe and do her part to rescue and redeem civilization. Without these forces she is helpless. Neutrality on the food question is as impossible as neutrality in the war itself. In the great conflict we shall win or lose according to our solution of the food problem.

Let us plant gardens as never before, and grow munitions at home to help win the war.

—*Charles Lathrop Pack, in the Outlook.*

PLANT THE SEED!

What do we do when we plant the seed?
We plant the things which our countries need.
Life for the soldier over the sea;
Necessities for you and me.
We plant the rock on which we found
The State—the Church—and all things sound.
With God's good aids—the rain and sun,
We plant the things which beat the Hun!
So you and I—all must take heed
And cheerfully—gratefully plant the seed!
What do we plant when we plant the seed?
Crops of gratitude we may read
In eyes of those whose stricken lands
Are fields laid bare by fiendish bands.
Their strength hangs breathless on the hours;
Their suppliant glances rest on ours.
Humanity is in the scale!
This country must not—shall not fail!
Then rise each town, and strive to lead!
What's what we do when we plant the seed.—*B. Nason Hamlin.*

WHAT TWO BOYS ARE DOING

It is no easy task now-a-days in many households to solve the problem of the high cost of living. The way in which two Rhode Island boys are aiding their mother to meet this problem may possibly be of service and interest to other boys.

They live on a lot fifty feet wide on a sunny street that slopes up one of the many hillsides of Providence. They are planning to repeat their successful farming venture of last season and raise a bumper crop of potatoes, beans and tomatoes, that will go a long ways toward reducing food bills. Five peach trees, two pear trees and a dozen or so of currant bushes, which they had helped set out some years ago, gave last fall a goodly amount of fruit for their mother to put up in jelly and preserves.

To the rear of the garden the lot extends some one hundred feet—and here is built the dove-cote, where a couple of dozen pigeons live and raise their young, which will furnish squabs for house and market purposes. Two goats, tethered by day on a near-by vacant lot, satisfy their hunger, as do most of their kind, on the scant herbage and debris that comes within their range. At night they are housed in a small shed built for them, and they contribute daily to the family table three pints of milk.

A wire netting screens off a long narrow section of the lot, where some 20 Rhode Island red hens are to do record work in laying eggs; while a half-dozen ducks waddle about and scratch a living in their midst.

A rabbit hutch, recently added, gives promise of a big family of furry creatures, good for their skins as well as their meat in the market.

What these two boys of 12 and 14 years are doing, it is possible for many other boys of their age to do, and gain as they have in the exercise of their muscles in the open air, not only health and strength, but the satisfaction of knowing they are real soldiers of the country helping to win the war by food production.—*Annie H. Barus.*

THE HAPPY FARMER

FREDERICK MANLEY — Adapted from SCHUMANN

Allegretto

1. A flash - ing ra-diance comes at dawn And calls me forth to wel-come toil A -
2. The lit - tle val - leys smile at me, The birds sing greet - ings all a-round; The
3. My soul is rich in si - lent songs, Oh! sweet-er far than ut-terred lays Of
4. I love my work, I love my kind. The clouds of heav'n, the dai - sied sod; I

mong the rows of gold - en corn And fields of rich and boun-teous soil; Its
brook-lets wink so ro - guish - ly And glance a - long with joy - ful sound; Their
birds that make har- mo - nious throngs In all the dap - pled wood -land ways: The
bear al - way a cheer - ful mind; I wor - ship Him, the lov - ing God, Whose

bright rays dai - ly pierce my heart And fill it full of sun - ny mirth. A
glad - ness dai - ly brings my heart A flood of thankful - ness and mirth. The
joy of flow'rs is in my heart, And fills it full of danc - ing mirth. My
kind - ness gives each hu - man heart Such wealth of beauty, joy, and mirth. I

flasn - ing ra-diance comes at dawn And calls me forth to wel-com toil.
lit - tle val - leys smile at me, The birds sing greet - ings all a - round.
soul is rich in si - lent songs, Oh! sweet- er far than ut- tered lays.
love my work, I love my kind, The clouds of heav'n, the dai - sied sod.

LET US PLANT A GARDEN

Come, let us plant a garden,
  And tend it well until
The dark brown soil shall show all green
  In valley and on hill.
The weeds we will not give a place,
  The hedges shall be fair;
Come let us plant a garden—
  Its harvest we shall share.

Come, let us plant a garden
  And tend it with such care,
The birds shall come and sing to us
  And cheer us, while the air,
With fragrance sweet, caresses cheeks,
  Refreshes and makes glad;
Come, let us plant a garden
  My little maid and lad.

—*Butler.*

HOME DRYING OF VEGETABLES

Dry vegetables and fruits for winter use if tin cans and glass jars for canning are scarce or expensive. Drying was a well-recognized and successful way of preserving certain foods before canning came into general use, and modern methods make it still more practicable than formerly, either in the home or by community groups.

Three methods of drying have been found to give satisfactory results. These are sun drying, drying by artificial heat, and drying with air blasts, as before an electric fan. Trays for drying by any one of these methods. as well as tray frames for use over stoves or before fans, can be made satisfactorily at home. Frames and trays for use with artificial heat may be purchased complete if desired.

Homemade trays may be constructed of side and end boards three-fourths of an inch thick and 2 inches wide, and bottom boards of lathing spaced one-fourth of an inch. If desired, ¼-inch galvanized wire mesh may be tacked to the side and end boards to form the bottoms of the trays. Frames for use before fans may be made of wood of convenient size. Frames for use with artificial heat should be made of non-inflammable material to as great an extent as possible. As many as six trays may be placed one above the other when artificial heat is used. In drying before a fan the number of trays that may be placed one above the other will depend, to a large extent, upon the diameter of the fan. In drying in the sun, trays as described may be used or the products to be dried may be spread on sheets of paper or muslin held in place by weights.

Vegetables and fruits will dry better if sliced. They should be cut into slices one-eighth to one-fourth of an inch thick; if thicker, they may not dry thoroughly. While drying, the products should be turned or stirred from time to time. Dried products should be packed temporarily for 3 or 4 days and poured each day from one box to another to bring about thorough mixing and so that the whole mass will have a uniform degree of moisture. If during this "conditioning" any pieces of the products are found to be too moist, they should be returned to the trays and dried further. When in condition the products may be packed permanently in tight paper bags, insect-proof paper boxes or cartons, or glass or tin containers.

CORN MAY HELP WIN THE WAR

And how? Because when we use more corn, the Allies—our associates in the war—can use more wheat. And wheat is what they need. Already in their bread they are using all the corn-meal possible. They can not grind corn, for they have not the mills. They can not use corn meal instead of wheat in their daily diet, as we do, because neither their cooks nor their appetites are adapted to it. Wheat they must have. And wheat we can give them—*if* we will eat corn. And only then. *There isn't enough wheat in the country for us to have it, and for them, too. We must make our choice—give or keep. And that choice also means—win or lose the war.*

THE COW

The friendly cow, all red and white,
I love with all my heart:
She gives me cream, with all her might,
To eat with apple-tart.

She wanders, lowing, here and there,
And yet she cannot stray,
All in the pleasant, open air,
The pleasant light of day.

And blown by all the winds that pass,
And wet with all the showers,
She walks among the meadow grass,
And eats the meadow flowers.

—*Robert Louis Stevenson.*

United States Government statistics show that there were 21,000 milch cows in Rhode Island herds in January, 1918, but that the herds had decreased by 2,000 cows in the preceding year, and by 3,000 altogether since the beginning of the war in 1914. The serious importance of the situation disclosed by such statistics will appear clearly when it is remembered that milk is one of the almost necessary elements in a well-balanced dietary, and that no substitute for milk has been found for the feeding of growing children. True patriotism, and loyalty to the principle of conservation, counsel increase rather than decrease of dairy herds. America's duty to her Allies includes the furnishing of dairy products. European cows have been slaughtered since the beginning of the war, both because of the impossibility of providing grain for feeding them, and because of the urgent necessity for providing meat.

HOW TO PRESERVE EGGS

Surplus eggs, preserved in the spring, will supply the home with good eggs in the fall and winter, when eggs are hard to get and are high-priced. Eggs to be preserved must be fresh, and should be placed in the preserving container as soon as possible after they are laid. One of the best methods of preserving is by the use of waterglass, a pale yellow, odorless, sirupy liquid that can be bought by the quart or gallon from the druggist or poultry supply man. It should be diluted in the proportion of 1 part of waterglass to 9 parts of water which has been boiled and allowed to cool. Earthenware crocks or jars are the best containers, since their glazed surface prevents chemical action from the solution. The crocks or cans should be scalded and allowed to cool before they are used. A container holding 5 gallons will accommodate 15 dozen eggs and will require one quart of waterglass.

Half fill the container with the waterglass solution and place the eggs in it. Eggs can be added from day to day as they are obtained, making sure that the eggs are covered by about 2 inches of waterglass solution. Cover the container and place it in a cool place where it will not have to be moved. Look at it from time to time, and if there seems to be danger of too much evaporation, add sufficient cool boiled water to keep the eggs covered. Eggs removed from the solution should be rinsed in clean, cold water. Before they are boiled, holes should be pricked in the large ends with a needle to prevent them from cracking.

Limewater also is satisfactory for preserving eggs and is slightly less expensive than waterglass. A solution is made by placing 2 or 3 pounds of unslaked lime in 5 gallons of water which has been boiled and allowed to cool, and allowing the mixture to stand until the lime settles and the liquid is clear. The eggs should be placed in a clean earthenware jar or other suitable vessel and covered to a depth of 2 inches with the liquid. Remove the eggs as desired, rinse in clean, cold water, and use immediately.

BOYS' AND GIRLS' CLUB WORK

The following statistics, in very brief and concise form, demonstrate the important service that boys' and girls' garden, canning and poultry clubs in Rhode Island rendered in 1917, in the movement for increasing food production and conserving food supplies. The clubs are under the direction of the extension department of Rhode Island State College. E. K. Thomas, is State Leader in club work.

Number of clubs organized, 301; number of clubs completing work, 291; number of members enrolled in clubs, 9,409; number of child members engaged in work, 8,325; value of products reported, $116,611.21; cost of production to club members, $50,158.30; profit to club members, $66,452.91.

A SUCCESSFUL SCHOOL FARM PROJECT

In 1917 students at Pentecostal Collegiate Institute in North Scituate, under the direction of Rev. W. A. Millett, rented two acres of farm land, and planted it with staple vegetables. The expenses, including rent and allowances for labor of students, were as follows: Rent of land, $15; plowing, $16; fertilizer, $69; seed, $65; hoeing, $40; harvesting, $60; total, $265. The value of the crops, rated at wholesale market prices at harvest time, was $414.

The quantities produced, and the value, were as follows: Potatoes, 140 bushels at $1.50, $210; beans, 2 bushels, at $10, $20; string beans, 20 bushels at $1.50, $30: peas, 20 bushels at $1.50, $30; beets, 10 bushels at $1, $10; corn, 300 dozen at 12 cents, $36; cucumbers, 2 barrels at $12, $24; celery, 260 heads at 15 cents, $39; small truck, $15; total, $414.

RED CROSS WORK IN NATURE-STUDY

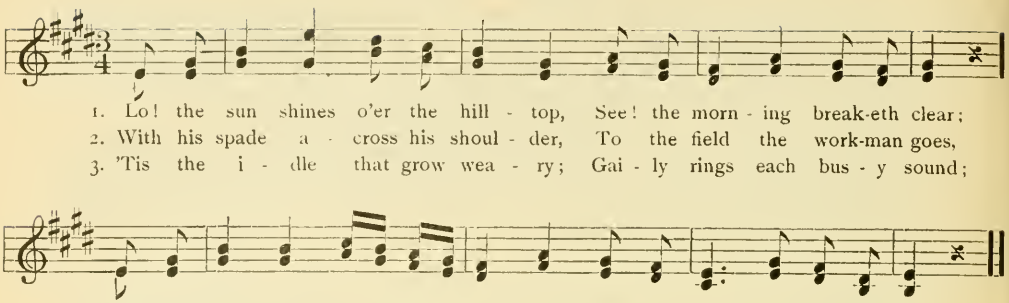
As absorbent cotton has to go through special treatment, it is rather expensive. A substitute for this has been found in Sphagnum Moss, which is also known as Bog Moss or Peat Moss. It has long been known that peat bogs have preserving qualities. Ancient animals, the mastodon and mammoth, have been found preserved in peat bogs. New England whaling vessels sometimes drew their drinking water from peat bogs because of its keeping qualities.

The antiseptic quality of peat moss, as well as its soft texture, makes it especially adapted for taking the place of absorbent cotton in the binding of wounds. The plant has unusual absorbing capacity. It is said that it can take in an amount of water equal to seven times its own weight. Thus it is an important substitute for cotton because it readily absorbs the drainage from the wounds.

Since Rhode Island has so many peat bogs, some schools no doubt will find an interesting way to help the Red Cross in collecting sphagnum moss, cleaning it, drying it; and packing it for some of the base hospitals. If any school tries the experiment a report addressed to the department of nature study at the Rhode Island Normal School will be appreciated.

If soldiers are willing to serve in the trenches, to dig ditches, build railroads, and risk their lives, many civilians can well afford to spare a part of their time to serve in the furrows and in the harvest fields—*Secretary Houston.*

THE FARMYARD.



From "The Mason School Music Course," Ginn and Company, Publishers.

MAKING THE HOME GARDEN COUNT

Every pound of potatoes, beans, peas, cabbage, parsnips, and other vegetables grown in a home garden this year will release food needed for the American soldiers in Europe, and for the fighting men and civilian population of this country's allies. This will not be pound for pound, of course, as the food value per pound of vegetables is less than that of meat and wheat; but three or four pounds of potatoes, parsnips, onions, or sweet corn will save a pound of beef or a pound of bread. Thus every leaf of lettuce, every head of cabbage, every stalk of celery, every bunch of beets raised this summer in a back yard or vacant lot will help to solve the vital food problem and thus win the war.

Under normal conditions, when meat is cheap and plentiful, from one to two pounds of fruits and vegetables are considered a fair proportion in the daily diet. But as an emergency war measure and a means of saving meat and cereals this can be increased, according to the food experts of the United States Department of Agriculture, to as much as four pounds of vegetables a day.

A healthful and palatable diet in ordinary times, according to the same authorities, should include from nine to twenty ounces of wheat, corn, oats, or other cereals. But this can be reduced safely to six ounces. Instead of three ounces of sugar a day, two ounces will be sufficient to keep any one in good health; and the same quantities apply to butter, oil, and other fat foods. The necessity for the increase in the weight of vegetables which must be eaten to replace the meat, cereals, sugar, and butter is due to the fact that vegetables, excepting dried fruits, contain a great proportion of water in comparison to their content of protein, carbohydrates, and fats.

Peas and beans are the great meat savers. Potatoes, both white and sweet, are important cereal savers. And sweet potatoes and fruits are the greatest sugar savers.

Potatoes make it possible to get along with less bread. They can be substituted for about one-fourth of the wheat flour in making ordinary bread and rolls. Mashed potatoes can be used in place of biscuit crust in making meat pies. Mashed potatoes sliced and fried may be used in place of bread and butter as a good breakfast dish. A very large variety of attractive salads may be made by combining potatoes with other vegetables, such as peas, beans, beets, cucumbers, radishes, onions, and so forth.

Food experts have worked out many ways in which vegetables can be made into healthful and appetizing dishes to take the place of the staple foods which must be saved for the American soldiers in France.

It is apparent, therefore, that the war gardens are a vital factor in the food problem of the United States. Not only will they increase the total stock of food, but they will help to relieve the freight congestion. For the more food that is grown close to the kitchen door, the nearer every city and town in the country comes to feeding itself. Many other advantages and benefits that come from gardening might be mentioned—advantages to both the individual and the Nation, such as the saving of money, the acquisition of the thrift habit, the improvement of health consequent upon outdoor exercise, the improved community spirit, and the deeper Americanism which will spring up from this practical patriotic service. But the principal motive which should impel the American home gardener in his work this year is the thought of increased food production. In winning the war by food, the home garden will deserve high honor for its important part.—*Charles L. Pack, in the Outlook.*

IT'S THE LITTLE THINGS THAT COUNT

I'm tired of eating corn bread, and I'm tired of meatless days,
My soul has come to loathe a bean, no matter what its phase,
Of left-overs I'm tired and sick, I've swallowed crumb and drop,
And now I fear I've reached the point where I would slack and stop.
But I recall that grains of wheat make up a big amount,
And if we'd win we must drill this in, "It's the little things that count."

I'm tired of sweetless days and weeks, I want a big iced cake,
I'm just a little weary of the kind that is a fake,
The butterless, eggless, milkless type, and the gingerless gingerbread,
I long just once for "ye olden days" when we were overfed.
But then I think, "These atoms sweet make up a big amount,"
And if we'd win we must drill this in, "It's the little things that count."

I'm tired of knitting all the time, I want to read a book,
Or curl up tight and take a nap in some nice quiet nook.
Of bandages and slings I dream, and the absorbent pad,
And all these gauze compresses, they make me sick and sad!
But I recall that howe'er small, they swell the whole amount,
And if we'd win we must drill this in, "It's the little things that count."

And so whene'er I'm weary and my brain is fagged and dull,
And in this round of little jobs I'd like to find a lull,
Or when I think that since I can't be Pershing, Haig or Joffre,
I might as well relax a bit, or throw the whole thing off,
Then I recall that howe'er small, we swell the whole amount,
And if we'd win we must drill this in, " 'Tis ordinary folks that count."

—*Alice Forman Wyckoff.*

THE MAN WHO WINS

The man who wins is the man who stays
In the unsought path and the rocky ways,
And, perhaps, who lingers now and then
To help some failure to rise again—
Yes, he is the man who wins.

LIBERTY AND GARDENS

By Gertrude Grossman, Rhode Island Normal School

Having lived half of my life in Russia, when the Czar was still on the throne, and the other half in the United States, I realize the difference between an autocracy and a democracy. A democracy is a government of the people, by the people and for the people. The freedom, rights and liberty which everyone enjoys here prove that to me. The oppression of the people and cruelties practiced on them, for the sake of the Czar and his friends, caused me to reach the conclusion that an autocracy is a government of a few, by a few, and for a few.

In Russia there were no free schools as there are here. In Zashkow, the town where I was born, when one wished to attend the grammar school, he had to take an entrance examination. The pupils found to have done best in the examinations were those who paid the best bribe. This was admitted by the very persons who paid the bribes. Besides bribery, each student had to pay a tuition, so that most of the people were financially unable to acquire an education. Half of the people of my town were unable to sign their names. The government, with its immense power, could have corrected this condition, but it did not desire to do so, because if the people were educated they would be aware of the state of affairs in Russia; they would see the cause and revolt against it. Naturally a revolution did not appeal to the Czar.

There were some, however, in the cities, where there was more chance to earn money, who did get an education; and when one had the opportunity to learn he certainly studied not only books, but conditions, people and life, with all the zeal that was in him. These students soon found out that the people of Russia were blind and that they yielded to the yoke of the Russian government like so many sheep. The people were so accustomed to the conditions which prevailed there at that time, that the students found it difficult to convince them that a change was possible. As most of the peasants were ignorant, these young educated people made it their business to travel around to the different towns and villages to enlighten the peasants. They distributed literature to those who knew how to read, and they spoke in the fields to others, where they had large audiences. The task of the revolutionist was a dangerous one, for as soon as he was caught in the act of carrying books or saying something about freedom, of which the government did not approve, he was arrested and later either sent to Siberia for life, or sentenced to death. Nevertheless, the work was continued. The police were constantly watching. Whenever a crowd of young people gathered for a celebration, or simply for a good time, spies were sent to be around to watch them. Good reason there was for them to be watched, for the best enjoyment the Russian youth had was to talk about the freedom and liberty which they did not have, and this of course was not in accordance with the ideas of the Russian government.

The peasants earned their livelihood by farming. Through their farms they produced enough to make them well off, but there were taxes and bribes to be paid, which reduced most of their earnings to just about enough to keep them alive. Some of us here do not like to use substitutes or to be out of sugar temporarily, but if we had to put up with the food the Russian peasants ate and the clothing they wore, which was mostly produced by themselves, we would have much more reason to be discontented. Moreover, what they earned by their labor was not taxed for improvements for the people themselves, but was added to the treasury of the ruler who had only himself and his friends in mind.

Zashkow was owned by one man who had a vast area of land to be cultivated. The poorer class of peasants thought that this was a good chance for them to earn a little more money. Men and women, some with babes in their arms, and children worked in the fields, leaving somebody at home to work their own farms. Their hours were from

six to sundown, and their pay was twenty-five cents per day. One time they decided that they were paid too little for their work. So they asked for a raise, and as they were not given any consideration, they all stopped work. The rule was that if a few left work, they were justified in doing so, but if everyone did, they were making a strike, which is punishable. So the owner notified a company of soldiers to come down and be ready to receive orders. We lived not far from the police station, and through the window we could see the chief of police sitting comfortably on the piazza, the enraged crowd in front of him demanding more money and in back of them a company of soldiers, ready to plunder or kill according to the commands of the chief. The latter told the peasants to disperse. They did not. Then came the order to the soldiers to advance. I saw the soldiers draw their shining swords, and as they began to advance I tightened my fist, I shut my eyes, but all I wished to know at that moment was that my mother was near me. We heard later that a few were killed and that some were injured. This punishment they received because they wanted more than twenty-five cents a day for gardening from six o'clock in the morning until sundown.

A short time after our arrival in America we moved to a farm. I soon noticed that the farmers had to pay taxes. It seemed to be a disappointment to have taxes here, too, as well as in Russia, even though the taxes were less. Later, however, I found out that the taxes, which we pay under this government, are really for our own comfort and conveniences; such as, the improvement of roads, the building of schools and having police forces, not to crush us but to protect us. My appreciation was great. What is even more wonderful to me now is the fact that the Chamber of Commerce is offering the free use of land. It means not only an opportunity to obtain food, but to help our soldiers and allies. Let us work with zeal and enthusiasm. Let us preserve the liberty and rights, which we have enjoyed and for which no sacrifice is too great, for our own good and for the good of other nations, that we may share them together.

THE POTATO

I was born long ago, I cannot tell when,
But I'm older than all the races of men;
In the far away South, by the side of the sea,
A birthright commission was given to me.

And so through the ages my business has been
To supply the real wants of the children of men.
I've traveled as far as the races have run,
And comforted all like the rays of the sun.

I am only a spud, a commonplace spud,
I thrive in the sand and I thrive in the mud;
At home with the rich and in love with the poor,
I'm the friend of all men from mountain to moor.

I'm here on the earth with a great work in hand,
Like the Master of old, on the sea and the land.
So I take my own place as He hath decreed,
And strive in my way to relieve the world's need.

And happy the man who doeth the same,
In obedient love to that Wonderful Name,
And comforts the child on the poor cottage floor,
Or the wanderer lost on the pitiless shore.—*Morgan.*

NATURE'S LESSON

Words and music by
T. B. Weaver, Prospect, Ohio

1. In the mys - tic book of a - ges, Sym - bols of our lives a - bound; Truths sur -
2. In the low - ly bend - ing wil - lows Sor row finds a gen - tle voice, While the
3. From the bus - y brook - let sing - ing On its jour - ney to the sea, From the

cres.

pass - ing those of sa - ges, Ev - 'ry leaf and flow'r propound. How the oak to strong en -
ma - ples' tint - ed bil - lows Bid our hearts and lives re - joice. And the elms in loft - y
i - vy meek - ly cling - ing To the old and life - less tree, From the dai - sy, mod - est

deav - or, Will - ing hand and heart in - spires! Tho' his trunk the storm would sever, Tow'rd the
meas - ure Turn our eyes to no - ble height, And the palm - tree lifts its treas - ure To the
flow - er, From the springtime's scented air, We be - hold a lov - ing Pow - er, Spreading

rit. *rit. dim.*

sun he still as pires, Tho' his trunk the storm would sev - er, Tow'rd the sun he still as - pires.
realms of pur - er light, And the palm - tree lifts its treas - ure To the realms of pur - er light.
beau - ty ev - 'ry - where, We be - hold a lov - ing Pow - er, Spreading beau - ty ev - 'ry - where.

From "Primary Plans"

FOUR TEACHERS AND A GARDEN

By Mary V. Gormley, Rhode Island Normal School, 1913

Our company conprised four Providence school teachers. For three entire seasons we kept house for ourselves under the patronage of a farmer and his family, who owned our house and the surrounding land. They lived a mile and a quarter distant. Our nearest neighbor on the east was "Fannie," a born farmer, who looked the part in every sense. From her we bought eggs, butter, and milk. The rest of our groceries, except meat and vegetables in early July, we obtained from "the hill," just one measured mile from our cottage. Our order for meat, twice a week, was filled at the nearest village, eight miles away and sent to us, by parcel post. Our credit is very fine so far. Therefore, by arrangement at the beginning of the summer, we eliminate the trouble of a money order every time and pay a bill at the end of our season. Our neighbor on the south is two miles distant; on the north, I can't find a family near enough to be a neighbor; and going west there is no one for a mile.

We never knew a truly lonesome day. No kind of weather kept us indoors. Yet, in July, 1916, when it rained every single day for nearly a month we were almost forced to stay in bed for lack of dry clothes. Then, sure enough, it stopped raining and we proceeded to "dry up."

I can never tell you of the natural beauty of our home. I know nothing like it with which to compare it. I believe there isn't anything.

Our house faces the north. It is well set back from a very sandy road, "Sand Bar Road." The other side of the road is a great hill of tall, slender pines, and a great new growth of white, red, and black oak. Two or three years ago the hill was nearly cleared of some of the trees by a lumber man. The smaller branches, which he scorned to take, have since then been our main source of fuel. First, we drag across the road all we need at that hauling, and then by breaking it with our hands, against our knees, or even sawing and splitting we make the lengths right for our stove.

We crawled through the barbed wire fence into Albro's pasture, too; for we had discovered an immense wild apple tree in decay. This burned with the hottest, reddest blaze you ever saw, and left the whitest, finest ashes possible. By the way, we saved every speck of wood ashes we could find room for.

Our drinking water was supplied from what we called a brook. It was really, however, a stream from "Fannie's" boiling spring, which had been led through our land. At the very spot where we got the water it was forced over a sort of wooden trough, which produced a slight fall, and made it easy to put a pail or similar vessel beneath to carry water inside. Just beyond the falls and in the "brook" we had a home-made refrigerator.

Everybody comes outside to "wash up," too. For regular bathing, though, we have an "improved" brook about three minutes walk from the house, toward the south.

For three years we didn't plant a thing. Last year was the beginning. We were given a right to use an unlimited amount of space. Potatoes were to be our main crop. We collected every note we ever had on gardening, attended all the lectures we knew of, read all the popular circulars and followed our common sense.

Potatoes and fertilizer were high. In fact the prices of all seeds seemed exorbitant. We bought our potatoes and fertilizer through an order at the State House. We also bought seeds for carrots, spinach, onions, peas, beets, and beans—the Scarlet Runner and Lafayette Pole. Besides these, we had some Government seeds, a half dozen kinds of corn, radishes, lettuce, squash, canteloupes, cucumbers, black lima and white lima beans. Then, too, we bought at a hot-house a dozen cabbage plants, and a dozen tomato plants. A farmer friend donated three plants of five different varieties of tomatoes, some cabbages, cauliflower, and peppers.

On the whole, our luck was marvelous—nothing short of a blessing on our labors. You know our greatest disadvantage is a short season. Its real extent is only the school vacation, as visits at other times, are almost impossible, because of the expense of travel. We are about 25 miles from the city, and about 8 miles from the nearest trolley or train Hence, with such luggage as two bushels of seed potatoes and two hundred pounds of fertilizer, to hire an automobile for the entire distance is the most sensible means of transportation, but not an inexpensive item. All through the summer this same expense goes on, for the nearest church is about a dozen miles away, and we must be there at 8:15 a. m. And we haven't had to miss a Sunday so far.

Our first visit last year was on Arbor day, May 11, 1917. We carried with us, not only all the seed we had, but a half pint of formalin for a solution in which to soak our potatoes to prevent rot. Besides whatever natural tendencies to decay the seed might have we also considered that we were planting in a section where potatoes, which were there the preceding summer, went to naught with a "black rot." We agreed, however that this was the result of weather conditions, and that the ground was sufficiently well fertilized to warrant a chance. So we took it, but soaked our potatoes for ninety minutes in a solution of one-half pint of formalin and fifteen gallons of water. At the end of that time we poured off all the liquid and left the potatoes to dry in the sun.

I almost forgot to say that because we do not own a horse or plow, our land was plowed and harrowed and the section for our potatoes was furrowed. While the potatoes were drying we furrowed more than two dozen, fifty to seventy-five foot rows. In these we planted in one place lettuce, corn, radishes, corn, lettuce, corn, radishes, etc. When we came back again in June most of the radishes had become first cousins to "horse-radish," the lettuce had needed attention and was nearly choked to death; and the crows had had a feast on our corn. Just about 35 stalks remained scattered around everywhere.

In another section we planted spinach, carrots, peas, and summer turnips. In an opposite patch we laid beets and onions. With the exception of spinach, which somehow or other just got lost, it seemed that every seed produced its fullest measure. And we forgot to miss the greens, for we used both turnip and radish tops while they were very tender. Instead of merely thinning our beets and using the greens in the same way, we attempted to get more by transplanting. The transplanted beets might have come, I suppose, but we did not have time to wait.

Summer squash, cucumbers and melons occupied a fourth space. All through August, a part of July and September, we had plenty of fresh cucumbers and our own pickles. Two or three medium-sized squash were gathered. The rest was stolen by an unruly woodchuck and the frost. On our return trip, about the last of September or the first of October, we had about a half dozen very small but sweet-tasting melons.

Besides our potato patch we had one other garden. This was not planted, however, until June. It held our transplanted growths—tomatoes, cabbages, cauliflower, peppers, and beets. Beets here never became very fine and we were never able to use the cauliflower, but the rest more than made up these losses by their robust strength. Here, too, we had 19 rows of lima bush beans and two long, long rows of Lafayette pole beans. Our beans were a whole summer's success. The black limas especially seemed never ending in their production. The pole beans were late and we used them only a few times as shell-beans. Then you know, we left them, expecting to have a grand lot of beans in the fall, but an early frost stole them all.

For recreation, after supper on Arbor Day, we cut seed potatoes—two eyes to a piece. The pieces with single eyes and the seed ends were kept in separate places. Then we scattered them over the floor, where the temperature was about 50 degrees.

Bright and early Saturday morning we were filling the furrows with fertilizer, mixing the soil with it, laying the seed, and covering it. We worked the whole day. But for

more than a week that followed it seemed that the time would never again come when we could walk or move without pain. It was about seven weeks before we saw our garden again. It surely was a sorrowful sight. Yet even we knew that the potatoes were fine. Housecleaning, which always was our first sacred duty, was half seen to. For weeks, I think it was until those very hot days in late July or early August, we worked an average of about eight hours a day. Three times we sprayed our potatoes with a solution of Bordeaux mixture. Early in the morning two or three times a week we went "bugging" with a little kerosene in the bottom of the can. We expected to use a soap mixture on our beans, but we never seemed to need to, finally.

Because we longed for crop of good country corn, we decided not to be discouraged at the fate of the first planting and try again. We planted four or five 100-foot rows of "Carpenter's Golden Sweet," a "Golden Bantam" rival. It came along beautifully. We weeded and hoed it regularly and at last it was beginning to appear like "real stuff." It had grown about as high or higher than our knees. It would be ready about the middle of September.

Where the people of the house were, I don't know; but the red heifer from an adjoining pasture jumped over the barbed wire; Tokyo broke through, somehow, and at the end of the day six greedy cows had eaten to the ground every stalk. They even ate or destroyed the 35 stalks which the crows left us.

School opened the tenth of September, I think, and we came home about the third. About four weeks later we returned to dig our potatoes and collect everything else. There was nothing left but potatoes, however. We had only one Saturday to dig them all. But our help numbered ten able, willing workers. At sundown we had dug, and dried under the sun, packed in bags, and on a big truck more than 30 bushels of A-1 potatoes. It was Saturday night and we rode home on the end of the truck.

For this year it seems as if my head would burst with all the other things I can think of doing for our crops. Yet I still have only the same 24 hours, and the amount of other work does not seem to decrease. My great worry is "Time's flying."

Our farm life has a social side, too. We go to clambakes, country auctions, country dances, and such. We have our private brook for bathing, and long, wondrous walks, and groves for picnics, and I think there are just one million other things to do.

If I would, I could keep on talking, forever. Folks at home here stand witness to that fact when they recall the talking we do immediately after our return. In complete exasperation they say, "One would think that no one but yourselves ever planted or know how to plant."

Still, "seeing is believing," Come to see us and we'll show you.

CLOVER

Plow the furrow wide and deep,
  Run it true and turn it fair,
Far across the sloping sweep,
  As the loam rolls from the share,
Polishing the moldboard bright
Till it glistens in the light.

Follow quickly with the harrow;
  Crush the clods, and fine the soil,
While the unturned strips grow narrow,
  As the sweating horses toil.
Harrow quickly, lest it harden;
Fine the soil as for a garden

Sow the seed, and let it slumber
  Warmed by sun and blest by rain,
Till the days, in stated number,
  Waken it to life again.
Then unfolds before our eyes
One of Nature's mysteries.

On the slope where first was showing
  Just a shimmering haze of green,
Day by day the shoots are growing
  Till no sign of soil is seen;
And the beauty is revealed
Of a growing clover field.—*Anonymous.*

SONG AFTER LABOR

UNISON SONG

B. Cornwall — Arranged from J. F. Reichardt

Allegretto moderato, ma energico

f

1. La - bor's strong and mer - ry chil - dren, Com - rades of the
2. No de spond - ing, no re - pin - ing! Lei - sure must by
3. E - ven God's all ho - ly la - bor, Framed the air, the

mf *cres.*

ris - ing an, Let us sing some songs to - geth - er, Let us sing
toil be bought; Nev - er yet was good ac - com-plished, Nev - er yet
stars, the sun; Built our earth on deep foun - da - tions, Built our earth

rall. *a tempo*

some songs to-geth - er, Now our toil, our toil is done.
was good ac-com - plished With - out hand and with - out thought.
on deep foun-da - tions; And the World, the World was won!

Adapted from "Alternate Third Book" by Eleanor Smith, Modern Music Series. Silver, Burdett and Company, Publishers.

—*United States Food Administration*

A CHILD'S NO-WASTE PLEDGE

I pledge allegiance to my flag,
In service time I will not lag,
I'll not despise my crusts of bread,
Nor make complaints whatever fed.
On wheatless days I'll eat no wheat,
On other days eat less of sweet.
I'll waste no pennies, spoil no clothes,
And so I'll battle 'gainst our foes.
No slacker I, but a soldier keen
To do his best in the year eighteen.

—*M. E. S. R.*

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